

Math 102 — More improper integrals

Problem. Determine whether the following improper integrals converge or diverge.

a. $\int_0^5 \frac{1}{x^{2/3}} dx$

b. $\int_1^5 \frac{1}{(x-2)^6} dx$

c. $\int_1^2 \frac{x^2}{(x^3-1)^{1/2}} dx$ *Hint: identify the asymptote and use substitution.*

d. $\int_0^\infty \frac{1}{(x-1)^2} dx$ *Hint: break this up into three improper integrals.*